NOTES ON THE CEROPLATINAE, WITH DESCRIPTIONS OF NEW AUSTRALIAN SPECIES (DIPTERA, MYCETOPHILIDAE).

By F. W. Edwards.

(Published by permission of the Trustees of the British Museum.)

(Communicated by I. M. Mackerras, B.Sc., M.B., Ch.M.)

(Four Text-figures.)

[Read 26th June, 1929.]

In these Proceedings (Vol. 53, 1928, 598) Mr. J. R. Malloch has a paper ("Notes on Australian Diptera", xvii) in which he purports to give a generic revision of the subfamily Ceroplatinae. His paper contains some valuable new suggestions for the classification of the group, but it is unfortunate that the author made no attempt to make himself acquainted with the literature published in the twenty years which have elapsed since Johannsen revised the Mycetophilidae in the "Genera Insectorum"; he was apparently unaware* of the fact that I had revised the genera of this family in 1925 (*Trans. Ent. Soc. London*, pp. 505-670), and that Tonnoir and I had together revised the New Zealand species in 1927 (*Trans. N.Z. Inst.*, vol. 57, pp. 747-878). This being the case it is natural that Malloch's work requires some emendation, and in calling attention to the corrections which are required, I should like to take the opportunity of publishing the results of work which I have done on the group since 1925. The publication of Malloch's paper has stimulated me to complete this work sooner than I should otherwise have done, and I am indebted to him on that account.

Apart from the fact that certain recently described genera are omitted, the chief fault in Malloch's key lies in the inclusion as separate genera of *Arctoneura*, *Nervijuncta* and *Casa*. As Tonnoir and I have shown, these belong to the subfamily Ditomyiinae, *Arctoneura* and *Casa* falling as synonyms of *Nervijuncta*. The generic keys published by me in 1925 will hold good in the main, but require amplification in regard to the *Platyura* and *Ceroplatus* groups, as explained below. The distinctions I gave between the Macrocerinae and Ceroplatinae require some modification. The presence of long anepisternal hairs is not constant in the former subfamily, and, as shown by Malloch, short hairs are often present in this position in the Ceroplatinae, a fact which I had previously overlooked. Perhaps the best distinction is that in the Macrocerinae the two spurs of the posterior tibiae are always short and subequal, whereas in the Ceroplatinae one spur is always several times longer than the tibial diameter. A few true Macrocerinae have short antennae. Further, I consider that the genus *Arachnocampa* belongs rightly to the Ceroplatinae and not to the Bolitophilinae, where it was placed by Tonnoir and myself in 1927.

---

* In a paper (These Proceedings, 1929) which was in the Press when this paper was received, Mr. Malloch corrects certain errors which had arisen through his not having seen previous papers by Edwards, and Edwards and Tonnoir.—Ed.

PLATYURA Mg.

When revising the family Mycetophilidae in 1925 I introduced new generic names for some aberrant groups of *Platyura*, restricted the old genus to species of the *fasciata* group, with a bristly postnotum (mediotergite), and adopted Brunetti's name *Isoneuromyia* for the remainder, recognizing that this last group was heterogeneous and would require further division. Further study since 1925 convinced me that a rather large number of small groups existed within the genus *Platyura*, which it would be more convenient to treat as subgenera than as full genera, and consequently Tonnoir and I decided, when reviewing the New Zealand species, to revert to the wider use of the name *Platyura*, leaving aside for the moment the question of subgeneric division.

Malloch in his recent paper made use of several of the characters which I had already noted in 1925, and also called attention to another—the presence of hairs on the lower frons—which is very useful in defining one group. It is only just to state that my discovery of some of these characters, and similar characters which are now widely adopted for the classification of the Culicidae, was largely due to hints given by Malloch in his papers on the Anthomyiidae. After examining all the available material, representing approximately one hundred species, I have come to the conclusion that the characters to which both Malloch and I attached first importance—the presence of hairs or bristles on the postnotal pleurotergites and mediotergite, and the position of the vein R_4—are of less taxonomic value than some others, such as the arrangement of the minute setulae of the tibiae and the presence or absence of rows of very small macrotrichia on the branches of the media and cubitus.

Using this last character as a main division, and the other characters previously noted for subdivisions, I am able at present to recognize nineteen subgenera of *Platyura* in the wide sense. Many, if not most, of these are very clearly defined and would by many students be treated as full genera without hesitation, especially if they happened to be Cyclorrhapha. I believe, however, that it will be more convenient to use the name *Platyura* in a comprehensive sense to include all members of the Ceroplatinae which possess the following combination of characters:

Palpi incurved, slender, of three distinct segments. Labium well preserved, but always shorter than head, labella large. Antennae 16-segmented, shorter than body, cylindrical or somewhat flattened, not broadly flattened (as in *Ceroplatus*) nor pectinate (as in *Platyroptilon*). Tarsi and usually tibiae with small spiny bristles; no empodia; hind tibia with outer and inner apical combs, and at least one long spur. Wings without macrotrichia on membrane; media and radius fused for a shorter or longer distance; no trace of fold-like basal portion of media.

Of the nineteen subgenera only four occur in New Zealand; these four and three others have been found in Australia, but several more should occur in that continent.

Key to known subgenera of Platyura.*

1. Branches of media and cubitus with close-set setulae (very small, but visible under an amplification of 80); R_4 always before mid-way between tips of R_1 and R_5; outer spur of posterior tibiae always well developed; pleuro-tergites always bare 2
   Branches of media and cubitus bare 7

* The characters mentioned in this key are not repeated in the notes which follow.

2. Tibial setulae in regular rows throughout, all rows alike; costa scarcely produced beyond tip of R_5; *An* strong and almost or quite reaching margin close to tip of Cu_2; mesonotum nearly always uniformly setulose, without bare stripes; mediotergite, hypopleurite and anepisternite bare; no spiracular hairs ..... *Isoneuromyia* Brun.
Tibial setulae irregular, except sometimes towards tip of tibia; costa always produced well beyond tip of R_5; mesonotum (except sometimes in *Neoplatyura*) with conspicuous bare stripes between the double or treble rows of acrostichal and dorsocentral bristles 3

3. A row of erect black hairs immediately behind prothoracic spiracle; mediotergite bare; length of *An* variable ..... *Neoplatyura* Mall.
No spiracular hairs 4

4. All veins reaching margin; mediotergite bare 5
Vein *An* abbreviated 6

5. Hypopleurite with a patch of short decumbent hair; anepisternite hairy above ..... *Pyrtaula*, n. subg.
Hypopleurite bare; anepisternite less hairy or bare ..... *Urytalpa*, n. subg.

6. Postnotal mediotergite with a transverse row of bristles near apex; costa reaching nearly to M_1 ..... *Rypatula*, n. subg.
Postnotal mediotergite bare; costa shorter ..... *Pyratula*, n. subg.

7. Tibial setulae irregular at base, in regular rows on about apical half of tibia; *An* reaching margin, but M_3 and Cu_1 somewhat abbreviated or faint apically; R_4 usually ending near R_1; outer spur of posterior tibiae well developed; mesonotum uniformly setulose; no spiracular hairs; pleurotergite and mediotergite bare 8
Tibial setulae in regular rows throughout (except sometimes at extreme base, and, in *Lutarpya*, on under side of hind tibia); *An* not reaching margin, other veins complete 9

8. A few short erect black hairs on lower frons immediately above and between roots of antennae ..... *Xenoplatyura* Mall.
No such hairs present ..... *Truplaya*, n. subg.

9. All rows of tibial setulae alike 10
About six rows of tibial setulae much more close-set than the others, appearing as conspicuous black lines under a hand lens; mesonotum uniformly setulose; pleurotergite and anepisternite bare; no spiracular hairs; R_4 short, placed at or beyond midway between tips of R_1 and R_5 18

10. Erect dark hairs present on posterior margin of prothoracic spiracle; pleurotergite bare, mediotergite more or less bristly or pubescent; anepisternite and hypopleurite usually with a few short hairs; hind tibia with small dorsal and external bristles as usual; mesonotum uniformly setulose (except sometimes in *Ralytupa*) 11
No spiracular hairs 13

11. Costa reaching well beyond tip of R_5; mediotergite with a few bristly hairs at apex only; outer spur of hind tibiae present but minute, not a quarter as long as inner; no hairs in *front* of prothoracic spiracle ..... *Rutylapa*, n. subg.
Costa reaching scarcely beyond tip of R_5; mediotergite with short decumbent hair 12

12. Outer spur of posterior tibiae well developed; mediotergite pubescent at sides towards base; no hairs in *front* of prothoracic spiracle ..... *Ralytupa*, n. subg.
Each tibia with a single spur; mediotergite pubescent above; erect hairs present in front of, as well as behind prothoracic spiracle ..... *Taulyrpa*, n. subg.

13. Each tibia with a single spur; tibial bristles reduced to a few, postero-ventral in position, on hind tibia and sometimes also on mid tibia 14
Outer spur of posterior tibiae present, though usually very short; at least a few anterior and dorsal bristles on hind tibiae; mesonotum uniformly setulose; mediotergite bare 16

14. Mediotergite bristly above; mesonotum uniformly setulose; *An* and Sc_2 absent; R_4 short, ending beyond half-way between R_1 and R_5; pleurotergites and anepisternites bare ..... *Laurypta*, n. subg.
Mediotergite bare; mesonotum with bare stripes; *An* and Sc_2 more or less indicated 15

15. Pleurotergites with longish erect hair; anepisternite with short hair above; R_4 ending in costa not far from R_1; *An* almost reaching margin ..... *Monocentrota* Edw.
Pleurotergites and anepisternite bare; R_4 ending in R_1; *An* very short ..... *Micrapemon* Edw.
16. Pleurotergites with longish erect hair; anepisternite with short hair above; antennae flattened; wings pictured ..... *Proceroplatus* Edw.
Pleurotergites without long hair; anepisternite bare; antennae cylindrical; wings plain 17
17. Pleurotergites and prosternum with short decumbent dark hair; anepisternite and hypopleurite bare ..... *Lutarpya*, n. subg.
Pleurotergites with very short, dense, erect, pale pile; anepisternite and hypopleurite with small patches of fine hairs ..... *Lapyruta*, n. subg.
18. Mediotergite rather pointed and bristly at apex; three ocelli; *An* moderately long; Sc distinct; antennal pubescence short as usual ..... *Platyura*, s. str.
Mediotergite almost or quite bare; two ocelli; *An* hardly distinguishable; Sc faint apically; antennal pubescence rather long ..... *Tylparua*, n. subg.

In the above key I have purposely mentioned only those characters which are common to the two sexes, but in the male hypopygium there are many important features which may be used to supplement the subgeneric diagnosis as given above. There are two main types of abdominal structure in male *Platyura*, in the first of which it is possible to recognize several subsidiary types, as outlined below:

A. Eighth segment small and more or less retracted within the seventh; seventh frequently small and sometimes retracted within the sixth; hypopygium capable of rotary movement; aedeagus small, lying entirely within the ninth segment and often feebly chitinized; abdomen usually more or less depressed.

(*a*) Ninth tergite small, broader than long; coxites (side-pieces) large; styles (claspers) large, simple, ending in two large teeth: *Isoneuromyia, Pyrtaula.*

This type of hypopygium is identical with that which occurs in the genera *Macrocera* and *Apemon* and evidently represents the primitive type of the subfamily. It will be noted that the two subgenera of *Platyura* included here also retain other primitive features, such as the setose media and cubitus and the complete anal vein.

(*b*) Ninth tergite longer than broad; coxites large; styles simple, but not formed as above, usually with a subterminal tooth: *Pyratula, Rypatula.*

(*c*) Ninth tergite usually large; coxites more or less fused; styles variously formed but usually divided or lobed and never shaped as in the two above-defined groups: *Proceroplatus; Monocentrota; Micrapemon; Lutarpya; Latyrupa; Ralyiupa; Rutylapa; Laurypta; Platyura; Tylparua.*

It is probable that distinguishing characters of subgeneric value occur in the hypopygium of some at least of the above groups, but a detailed study will be needed to reveal them, especially as great differences are found between closely allied species.

B. Eighth segment not entirely retracted, often quite large; seventh segment as large as sixth; hypopygium non-rotatable; aedeagus large, strongly chitinized, with apodemes extending back at least into the eighth, often into the seventh or even the sixth segment; coxites and styles always small, the latter especially so, though often of rather complicated structure; abdomen seldom depressed, more often conspicuously compressed apically: *Neoplatyura; Urytalpa; Xenoplatyura; Truplaya.*

Subgenus Isoneuromyia Brun.

Mesonotum uniformly setulose (rarely traces occur of two bare lines, but even so the acrostichal bristles are short and in about four rows). Scutellum usually with short hairs dorsally, in addition to the ordinary marginal bristles. Pleurotergite bare, but usually with a silvery sheen due to microscopic pubescence, and unusually large and sharply prominent, covering base of halteres. Anepisternite and hypopleurite bare. Propleural bristles unusually numerous and strong, most of them projecting downwards in a tuft. Venation: R_4 ending near tip of R_1; M_2 and Cu_1 usually stopping short a little before margin. The species are all of large size and most have conspicuous wing-markings and banded abdomen. In some the antennae are more or less flattened, approaching the structure of *Ceroplatus*.

Genotype, *I. annandalei* Brun. (India).

Additional species: *I. rufescens* Brun. and *Platyura grandis* Brun. (India); *P. magna* Walk. (Australia); *P. novae-zealandiae* Tonn. (*magna* Marsh.) and *P. harrisi* Tonn. (New Zealand); *P. elegantula* Will. (West Indies); and *P. semirufa* Mg. (Europe).

Subgenus Pyrtaula, nov.

Scutellum with marginal bristles only. Pleurotergite not very prominent, rounded behind, without the sharp edge characteristic of *Isoneuromyia*, and without distinct silvery dusting. Propleural bristles few in number, slender and suberect as usual. *An* not very strong, curved, ending some distance from tip of Cu_2.

Genotype, *Platyura agricolae* Marshall (New Zealand).

Additional species: *P. fenestralis* Skuse and *P. venusta* Skuse (Australia); *P. maculipennis* Tonn., *P. rutila* Edw., *P. campbelli* Tonn., *P. ruficauda* Tonn., *P. curtisi* Edw., *P. rufipectus* Tonn., *P. ohakunensis* Edw., *P. punctifusa* Edw., and probably *P. philpotti* Tonn., *P. carbonaria* Tonn., and *P. chiltoni* Tonn. (New Zealand); also a number of undescribed species in the British Museum from South Chile.

Platyura (Pyrtaula) flavipennis, n. nom.

Platyura venusta Skuse 1888, *nec* Walker 1856.

This species is distinguished from *P. fenestralis* Skuse and the allied new species described below, by its somewhat larger size, the strong yellow tint of the wings, and somewhat different wing-markings, especially the brown cloud along lower margin of Cu_2 in outer half of cell Cu_2. The British Museum possesses a ♀ from Burpengary, Queensland (Bancroft).

Platyura (Pyrtaula) westralis, n. sp.

Differs from *P. (P.) fenestralis* Skuse as follows: Size somewhat smaller (wing-length of ♂ 3·5 mm.); scape of antennae clearer ochreous; first abdominal segment entirely ochreous; no darkening on base of Rs; central wing-spot not nearly reaching tip of R_1; no spot below R_1; scarcely a trace of darkening on hind margin of wing between tips of Cu_2 and *An*.

Loc.—Western Australia: Swan River (J. Clark); type and one other ♂ in British Museum. Specimens of *P. fenestralis* Skuse are available for comparison from Melbourne (Hill) and Mangalore, Tasmania (White).

Subgenus Pyratula, nov.

This subgenus is proposed for two or three species which are certainly related to the subgenus *Pyrtaula*, but are separated therefrom on account of the abbreviated anal vein. All are of very small size and black in colour.

Genotype, *Platyura zonata* Zett. (Europe).

Additional species: *P. perpusilla* Edw. (Britain) and probably *P. minuta* Senior-White (Ceylon) (but this last may belong to the genus *Burmacrocera* Coq.; the type is fragmentary).

Subgenus Rypatula, nov.

Genotype, *Platyura brevis* Tonn. (New Zealand).

Additional species: *P. subbrevis* Tonn. (New Zealand); and most probably *Platyura gracilis* Skuse (Australia). All the species are of small size, without definite ornamentation, and the subgenus appears to be the antipodal representative of *Pyratula*. The presence of bristles on the mediotergite does not indicate any close affinity with *Laurypta*, *Rutylapa* and *Platyura* (s.str.), which also possess such bristles.

Subgenus Neoplatyura Mall.

Genotype, *Platyura setiger* Joh. (N. America).

Additional species: *P. flava* Macq., *P. modesta* Winn., *P. nigricauda* Strobl., and *P. biumbrata* Edw. (Europe); *P. axillariger* End. (Seychelles); *P. tjibodensis* Edw. (Java); *P. ignobilis* Will. (West Indies); *P. mendosa* Lw. (N. America); *P. richmondensis* Skuse and probably *P. monticola* Skuse (Australia); *P. marshalli* Tonn., *P. proxima* Tonn., *P. lamellata* Tonn. and *P. brookesi* Edw. (New Zealand); also the two Tasmanian species described below.

The species are all small, usually yellowish, without conspicuous ornamentation; anepisternite and hypopleurite bare.

The New Zealand species form a somewhat aberrant group in which the mesonotum is uniformly setulose, and vein *An* is more abbreviated than usual, but there seems insufficient reason to separate them subgenerically. *P. monticola* Skuse may belong to this New Zealand group. Among the remaining species there are several rather distinct types of hypopygial structure, especially as regards the form of the ninth tergite (when this is present). Two of these types are represented in the two new species described below.

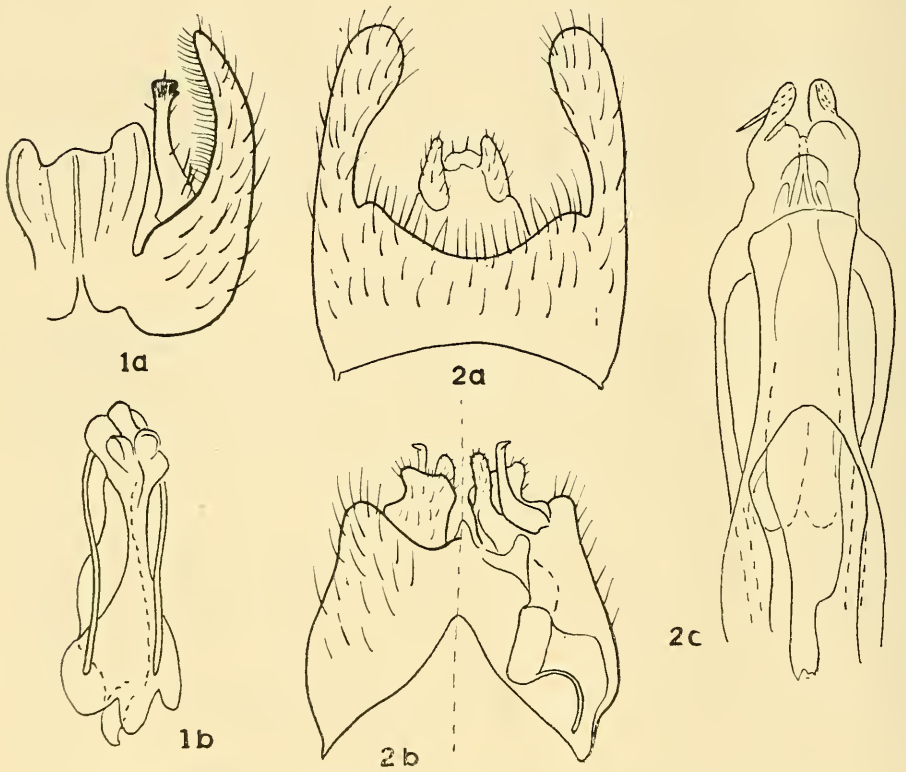
Platyura (Neoplatyura) fidelis, n. sp. Text-fig. 1.

♂. Head black, including antennae and mouth-parts. Antennae as long as head and thorax together, rather stout, flagellar segments somewhat longer than broad. Thorax brownish-ochreous; mesonotum somewhat darker, dull, without definite stripes; anepisternite darker than remainder of pleurae. Acrostichal bristles in a double row as usual. Abdomen dark brownish, hind margins of tergites ochreous, also most of sternites. Hypopygium (Text-fig. 1) with ninth tergite absent or reduced to a very narrow bare transverse stripe; median membranous area of ninth sternite longitudinally folded; coxites densely pubescent within; styles articulated at base of coxites. Legs yellowish. Wings with a faint brown tinge; a faint grey cloud below tip of costa. Sc ending before base of Rs; R_4 only a little before mid-way between R_1 and R_5; costa reaching nearly half-way to M_1; radio-medial fusion very short; *An* extending quite four-fifths

of the way across the anal field. Halteres with ochreous stem, knob darkened. Wing-length 4 mm.

Loc.—Tasmania: Mangalore, 8.xii.1913 (A. White); type ♂ in British Museum.

This belongs to the same group as the European *P. flava* Mcq., *P. modesta* Winn. and *P. nigricauda* Strobl, which likewise have no ninth tergite; the Tasmanian species differs from the European in small details of hypopygial structure, and more obviously in the somewhat abbreviated anal vein.



Text-fig. 1.—*Platyura* (*Neoplatyura*) *fidelis*, n. sp. *a*, ninth sternite, coxite and style from beneath; *b*, aedeagus, half side view.

Text-fig. 2.—*Platyura* (*Neoplatyura*) *tasmanica*, n. sp. *a*, ninth tergite and anal segment from above; *b*, ninth sternite and appendages, left from below, right from above; *c*, aedeagus (proximal portion of apodemes cut off).

All figures to same scale.

Platyura (Neoplatyura) tasmanica, n. sp. Text-fig. 2.

♂. Superficially resembles the preceding, differing as follows: Antennae slightly shorter. Palpi dark brownish. Pleurae and postnotum wholly blackish. Hypopygium (Text-fig. 2) with ninth tergite well developed, narrow in middle, with long and rather broad lateral arms; ninth sternite without extensive membranous median area; aedeagus very large. Hind femora with a dark streak

at base beneath. Wings with a larger grey cloud towards costa at tip, reaching back almost to R_1; Sc ending above base of Rs; R_4 before one-third of the distance from R_1 to R_5; costa reaching about one-third of the distance from R_5 to M_1; *An* reaching about three-quarters of the way across anal field. Halteres chiefly pale. Wing-length 4·2 mm.

Loc.—Tasmania: Mangalore, 1.x.1914 (A. White). Type ♂ in British Museum.

The hypopygium somewhat resembles that of the North American *P. mendosa* Lw. It is just possible that this may be *P. monticola* Skuse, described from caves in the Blue Mts.

PLATYURA (NEOPLATYURA) RICHMONDENSIS Skuse. Text-fig. 3.

The British Museum possesses a male of this species from Queensland (Bancroft). It is an almost typical *Neoplatyura*, the only unusual features being the spot over R_4 and the short anal vein. The hypopygium (Text-fig. 3) is interesting, as the form of the ninth tergite is intermediate between *P. tasmanica* and the New Zealand species, the lateral being slender. The bare lines on the mesonotum are also less evident than in *P. tasmanica*, indicating an approach to the type of *P. marshalli*.

Subgenus URYTALPA, nov.

Genotype, *Platyura ochracea* Mg. (*dorsalis* Staeg.) (Europe).

Additional species: *P. atriceps* Edw., *P. macrocera* Edw. (Britain), and probably *P. vicina* Brun. (India).

This subgenus is proposed for a few species which have almost all the external characters of *Pyrtaula*, but in which the hypopygium is totally different from that of *Pyrtaula* and resembles that of *Neoplatyura*. The only external distinction from *Pyrtaula* which I have been able to discover is the absence of minute hairs on the hypopleurite, but it is doubtful if even this is constant. In the genotype (*P. ochracea*) a few small anepisternal hairs may be present or absent.

Subgenus XENOPLATYURA Mall.

Genotype, *Platyura conformis* Skuse.

Additional species: *P. schineri* Skuse and probably *P. contingens* Skuse (Australia); *P. hopkinsi* Edw. (Samoa); *P. octosegmentata* Brun., *P. longifurcata* Brun., and *P. lunifrons* White (India); *P. longejuncta* Speiser (W. Africa); and several undescribed African species in British Museum.

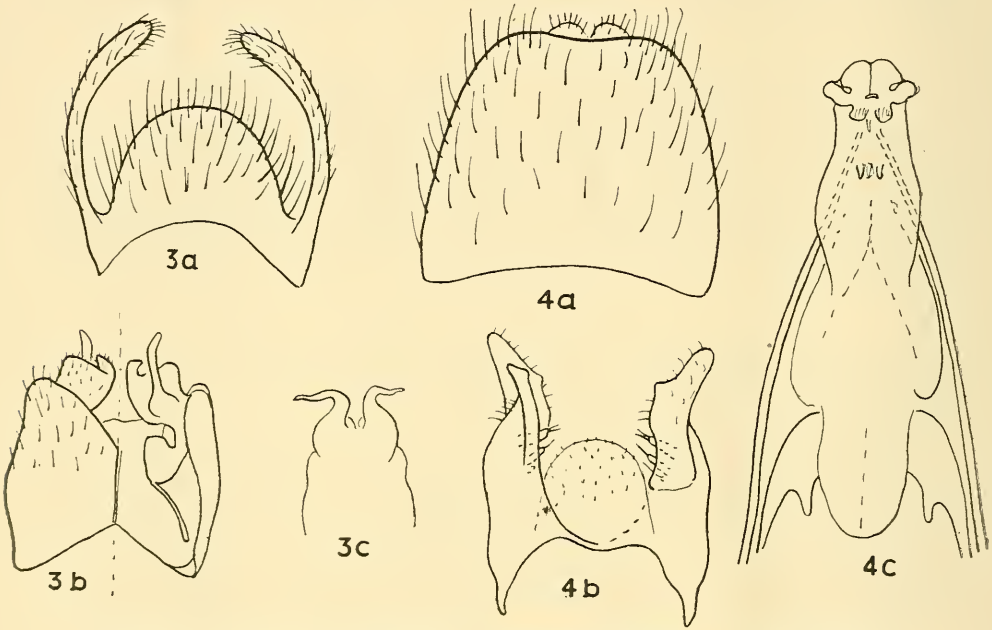
PLATYURA (XENOPLATYURA) DODDI, n. sp. Text-fig. 4.

♂. Head dark brownish, almost black round ocelli; front lighter brown and dusted with grey. Mouth-parts yellowish. Antennae with scape ochreous, flagellum black, scarcely as long as thorax, segments scarcely as long as broad. Thorax brownish-ochreous above, without obvious stripes, sides of mesonotum somewhat lighter and more grey-dusted; pleurae somewhat darker; pronotal lobes and propleurae yellowish. Abdomen black, first two sternites paler, segments 1-6 inconspicuously bordered with yellow posteriorly. Ninth tergite somewhat square, not greatly produced, other parts as in Text-figure 4. Legs yellowish, tarsi dark. On anterior legs about apical half, on hind legs apical third of tibiae with regular rows of setulae. Outer spurs of posterior tibiae more than half as long as inner. Wings clear, untinted. Sc reaching scarcely beyond base of R_5; R_4 straight,

ending well before level of tip of M_2; costa moderately produced, ending well before wing-tip; *r-m* fusion as long as stem of median fork. Halteres yellow. Wing-length 4 mm.

Loc.—Queensland: Townsville (F. P. Dodd); type ♂ in British Museum.

This is evidently allied to *P. conformis* Skuse and *P. schineri* Skuse, differing from both in the uniformly ochreous thorax. Malloch's figures of the hypopygium of *P. conformis* indicate an allied but distinct species.



Text-fig. 3.—*Platyura* (*Neoplatyura*) *richmondensis* Skuse. *a*, ninth tergite; *b*, ninth sternite and appendages, left from below, right from above; *c*, tip of aedeagus.

Text-fig. 4.—*Platyura* (*Xenoplatyura*) *doddi*, n. sp. *a*, ninth tergite; *b*, ninth sternite and appendages, left from below, right from above; *c*, aedeagus (proximal portion of apodemes cut off).

All figures to same scale.

Subgenus Truplaya, nov.

Genotype, *Platyura venusta* Walk. (India).

Additional species: *P. fumipes* Brun. (Ceylon); *Zelmira flavioralis* Speiser (Formosa); *Z. calogastra* Speiser (W. Africa).

Truplaya forms a connecting link between *Isoneuromyia* and *Xenoplatyura*, resembling the former in general appearance, but with the same chaetotaxy and hypopygial structure as in the latter. All the species known to me have a distinctive type of ornamentation; they are black, with conspicuous white apical bands on the second and fourth abdominal tergites, and rather glassy wings. An undescribed species from Sierra Leone has lateral fringes of bristles on the prosternum, but in other respects resembles the other species, which have the prosternum bare (as have all other species of *Platyura* which I have examined, with the exception of *P. fulva* Skuse).

Subgenus Taulyrpa, nov.

Genotype, *Cerotelion vespiformis* Enderlein (Brazil).

Enderlein described a male only. There is in the British Museum a specimen from Para (Bates) which may be a female of *P. vespiformis* or may represent another allied species. The characters of the tibial setulae and spiracular hairs have been noted from this specimen; they were not mentioned by Enderlein.

Subgenus Laurypta, nov.

Genotype, *Platyura leptura* Edw. (Malay Peninsula).

Additional species: *P. tripunctata* Senior-White (Ceylon); *P. laevis* End. (Seychelles). All the species are small and delicately built.

Subgenus Monocentrota Edw.

In addition to the genotype (*P. lundstroemi* Edw. of Europe) the Indian *P. indistincta* Brun. may belong here.

According to information supplied by Mr. A. L. Tonnoir, Skuse's genus *Pseudoplatyura* possesses most of the characters of *Monocentrota*, differing mainly, if not solely, in having one segment fewer in the antennae. *Platyroptilon* Westw. (or at least the Ceylonese *P. talaroceroides* White, which is the only species I have examined) is also similar to *Monocentrota* in all respects except for its remarkable pectinate antennae.

Subgenus Ralytupa, nov.

Genotype, *Platyura pendleburyi* Edw. (Malay Peninsula).

Three or four additional species from Africa are represented in the British Museum collections, but are at present undescribed. In all these the mesonotum is uniformly setulose as usual in this group of subgenera, although in *P. pendleburyi* it has distinct bare lines.

The only other subgenera in which the costa in not distinctly produced beyond R_5 are *Isoneuromyia* and *Taulyrpa*, both very distinct in other respects.

Subgenus Rutylapa, nov.

Genotype, *Platyura ruficornis* Zett. (*pectinifera* Edw.) (Europe).

Additional species: *P. juxta* White (*ruficornis* Brun.) (India); *P. penrissenensis* Edw. (Borneo); also an undescribed species in British Museum from Nigeria.

Rutylapa differs from all the other subgenera known to me except *Neoplatyura*, *Taulyrpa* and *Ralytupa*, in the possession of spiracular hairs; from the first it differs obviously in the bare media and cubitus; from the second in the presence of the outer spur on the posterior tibiae; and from the third in the produced costa. The presence of a few postnotal bristles may not be constant.

Subgenus Proceroplatus Edw.
(*Calliplatyura* Mall.)

The two genotypes (*P. pictipennis* Will. and *P. elegans* Coq.) are very closely related and possibly to be regarded as geographical forms of the same species. In addition to these, I am acquainted with three or four Oriental and one African species, most of which have conspicuous wing-markings arranged on a similar plan. The figure given by Skuse of the wing of his *Platyura graphica* shows very similar markings, and I have no doubt that species also belongs here.

Malloch in his diagnosis of *Calliplatyura* states that Sc_2 is absent and each tibia has one long "bristle" (i.e. spur) at apex. He has, however, overlooked the minute outer spur of the posterior tibiae, which is always present; and the subcostal cross-vein, which is also present but only very slightly beyond the level of the humeral.

Subgenus Lutarpya, nov.

Genotype, *Platyura fulva* Skuse.

In the genotype the hind tibiae of the male are somewhat swollen on the middle half, the swollen part clothed beneath and at the sides with very dense irregularly arranged setulae, although the dorsal surface of the tibia bears a few continuous and regular rows of setulae. This may be only a sexual character. The presence of pubescence on the prosternum is very exceptional. The British Museum possesses a male from South Queensland (Bancroft).

Subgenus Lapyruta, nov.

Genotype, *Platyura fasciventris* Will. (West Indies).

In the type the antennae are noticeably flattened, but this may be only a specific character. There are curious sexual differences: in the ♂ the abdomen is compressed, broadest in the middle, with segments 2 and 3 longer than the others and projecting ventrally; the inner spurs of the hind tibia are peculiar: stout and yellowish on the basal portion, more swollen and black just before the acuminate tip. In the ♀ both abdomen and spurs are normal. The species was wrongly described as having only one spur on each tibia; actually the outer spurs are well developed.

Subgenus Platyura Meig., s. str.

Genotype, *Platyura fasciata* Mg. (Europe).

Additional species: *P. apicipennis* Brun., *P. affinis* Brun., and *P. flaviventris* Brun. (India); *P. nemoralis* Mg., *P. pallida* Staeg., *P. nigricornis* Fab. and *P. discoloria* Mg. (Europe); *P. fascipennis* Say and probably *P. moerens* Joh., *P. diluta* Lw., *P. subterminalis* Say and *P. moesta* Joh. (North America).

Subgenus Tylparua, nov.

Genotype, *Platyura hawaiiensis* Grimshaw (Hawaii).

Additional species: *P. insularis* Grimshaw and probably *P. fuscocostata* Grimshaw (Hawaii).

Another species possibly belonging here is *P. funerea* Brun. (India), which also lacks the median ocellus, but its other characters have not been fully described. *Tylparua* is evidently most closely allied to *Platyura*, s. str., differing chiefly in the absence of the median ocellus. In the genotype the antennae of the male are unusually long and the wings of the female peculiar in shape; the mediotergite is quite bare. In *P. insularis* the mediotergite bears a few very small bristles apically, so that this character does not form a clear distinction from *Platyura*.

Asindulum Latr.

The genotype (*A. nigrum* Latr.) has the postnotal pleuro-tergites and mediotergite bare; a patch of short hair on the anepisternite; no spiracular hairs; mesonotum with bare lines; tibial setulae irregularly arranged; *An* nearly reaching

margin; no setulae on branches of media and cubitus. No group of *Platyura* known to me possesses this combination of characters, but the hypopygium suggests an affinity with *Urytalpa*.

A. flavum Winn. (genotype of *Macrorrhyncha* Winn. and *Adelinia* Costa) differs from *A. nigrum* in having a few short bristles on mediotergite; several spiracular hairs; no hairs on the anepisternite; *An* more abbreviated; and close-set rows of small setulae on branches of media and cubitus. *A. rostratum* Zett. is similar to *A. flavum*, except in lacking the postnotal bristles. These two species may be placed in a separate subgenus *Macrorrhyncha*; except for the elongate mouth-parts they have all the characters of *Neoplatyura*.

Antlemon Hal.

(*Helladipichoria* Beck.)

The two species of this genus, as I have previously pointed out, differ essentially from *Asindulum* in the structure of the labium, which has the theca elongate but the labella very small. It may now be noted that they have the branches of the media and cubitus bare, but agree with *Asindulum* (subgenus *Macrorrhyncha*) in having a few spiracular hairs and a bare anepisternite; the postnotum is quite bare, and tibial setulae irregular.

Ceroplatus Bosc.

The essential distinction between *Ceroplatus* and *Platyura* is in the structure of the mouth-parts: in the former the labium is more or less atrophied, and the maxillary palpi are porrect and consist of one swollen segment; whereas in the latter the labium is well preserved and the maxillary palpi are incurved, with three slender segments. Johannsen in 1909 recognized *Cerotelion* as a genus distinct from *Ceroplatus* on the basis of the venation (R_4 ending in costa), a restriction which I accepted in 1925 and which Malloch followed in his recent paper. I now consider, however, that the venational difference is of less moment than some other distinctions which occur among species which have been referred to *Cerotelion*, and therefore propose to include this latter (as well as *Heteropterna*) as a subgenus of *Ceroplatus*.

Malloch has called attention to the existence of short hairs on the anepisternite in some species of *Ceroplatus*. I find that these hairs are too variable and inconstant to be made the basis of subgeneric division, and the same is true of the bristly hairs on the prosternum. Contrary to what we find in *Platyura*, most species of *Ceroplatus* have a hairy prosternum, but the hairs are variable in number and length and in one or two species are absent.

It may be noted that all species of *Ceroplatus* have the lower front bare; mesonotum uniformly setulose; spiracular hairs absent; hypopleurite and mediotergite bare; outer spur of hind tibiae well developed; and branches of media and cubitus bare. It would thus seem that all have been developed from a group of *Platyura* having most of the characters of the subgenus *Proceroplatus*.

I propose to recognize six subgenera of *Ceroplatus*, distinguished as follows:—

1. Tibial setulae irregularly arranged, unless at extreme tip of tibia; R_4 ending in costa 2
   Tibial setulae in regular rows throughout 4
2. Pleurotergites hairy; middle and hind tibiae with small dorsal and external bristles ..... *Mallochinus*, n. subg.
   Pleurotergites bare 3

3. Tibiae with small dorsal and external as well as internal bristles; hind tibia slightly and evenly enlarged from base to apex; first hind tarsal segment not at all thickened, its bristles rather irregular; tibial spurs black as usual; face broad ..... *Cerotelion* Rond.
   Tibiae without bristles except a few on inner (posterior) side of middle and hind tibiae; hind tibia rather suddenly enlarged on apical third or fourth; first hind tarsal segment more or less thickened and with two very regular ventral rows of short bristles; tibial spurs yellow; face narrow ..... *Heteropterna* Skuse.
4. Pleurotergites bare; posterior tibiae with small dorsal and external bristles; R_4 ending in costa ..... *Euceroplatus*, n. subg.
   Pleurotergites hairy; posterior tibiae with small internal bristles only 5
5. R_4 ending in R_1; three ocelli as usual; face not very narrow; front tarsi not remarkably long ..... *Ceroplatus*, s. str.
   R_4 ending in costa; two ocelli; face very narrow; front tarsi very long, first segment twice as long as tibia ..... *Placoceratias* End.

Subgenus MALLOCHINUS, nov.

Genotype, *Ceroplatus mastersi* Skuse.

This agrees with *Cerotelion* in having the face moderately broad; eyes deeply emarginate above roots of antennae; and lateral ocelli almost touching eye-margins. An apparently undescribed species is represented in the British Museum from Tasmania.

CEROPLATUS (MALLOCHINUS) MANGALORENSIS, n. sp.

Differs from *C. mastersi* Skuse, as follows:—Antennae entirely black. Pleurotergites entirely yellowish. Hind femora with a broad dark brown ring close to base. Apical dark cloud of wing extending into tip of cell R_1.

Loc.—Tasmania: Mangalore, 17.ii.1913 (A. White); type in British Museum (abdomen missing).

Subgenus CEROTELION Rond.

In addition to the genotype (*C. lineatus* F., of Europe) several species of this subgenus occur in New Zealand; of those described by Tonnoir and myself in our recent revision *C. hudsoni* Hutt., *C. leucoceras* Marsh., *C. bimaculatus* Tonn., and *C. tapleyi* Edw. certainly belong here, and it seems probable that this is the only subgenus occurring in New Zealand. I have also taken an example of another species, apparently undescribed, at Washington, D.C.

Subgenus HETEROPTERNA Skuse.

I have not seen either of the two Australian species described by Skuse, but *C. quadripunctatus* Brun. of India agrees in almost every detail with Skuse's description of *Heteropterna*, and I have used material of this species in drawing up my definition of the subgenus. It is of interest to note that both the Australian and Indian species were taken in spiders' webs.

Cerotelion major Curran (Jamaica) is remarkably like *C. quadripunctatus*, and though the type in the British Museum is legless and otherwise damaged, I have no hesitation in referring it to this subgenus.

Subgenus EUCEROPLATUS, nov.

Genotype, *Ceroplatus notaticoxa* Senior-White (Ceylon).

This subgenus does not differ greatly from *Cerotelion*, except in the regular alignment of the tibial setulae. In the genotype the prosternum is bare, but in *C. bellulus* Will. (Mexico), which seems also to belong here, it is hairy as usual. In both the face is narrower than in *Cerotelion*, the eye less emarginate above insertion of antennae, and the lateral ocelli remote from the eye-margins.

Subgenus CEROPLATUS Bosc., s. str.

I have examined two European and one North American species, all of which conform to the diagnosis in the above key.

Subgenus PLACOCERATIAS End.

This subgenus, founded by Enderlein for two Brazilian species, also includes the West Indian *C. longimanus* Will., which is in all essentials similar to the other two.